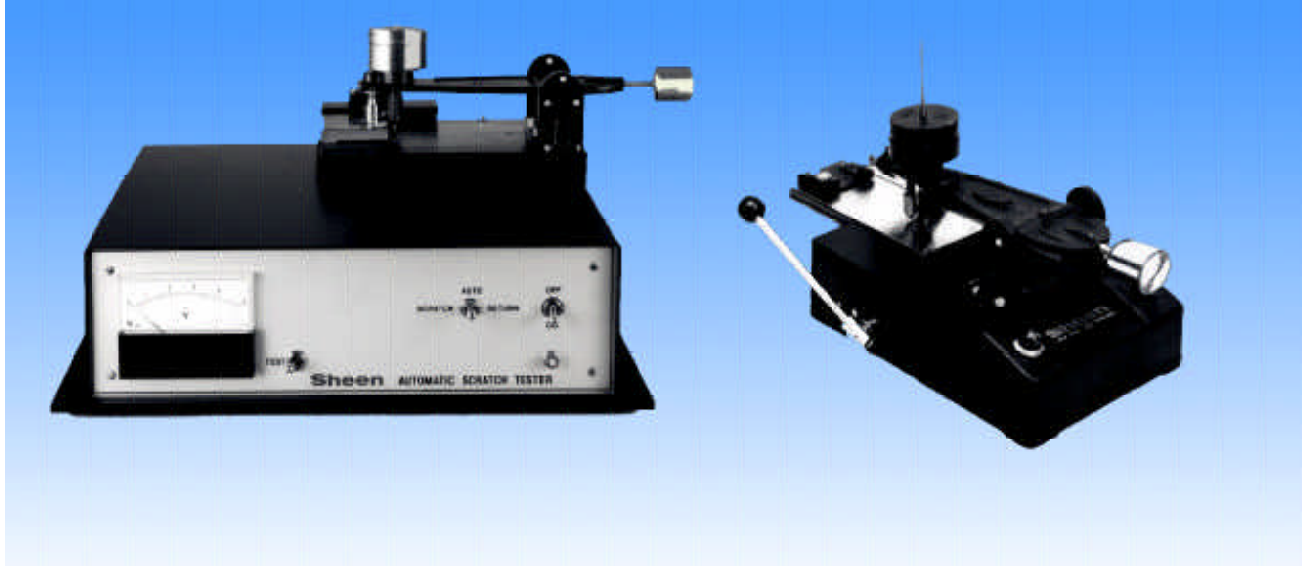




SCRATCH TEST APPARATUS



REF 705

REF 706

Coating performance is related to many factors that include the hardness of the coating with other physical properties such as adhesion, lubricity, resilience etc., as well as the influence of coating thickness and curing conditions. It is a quantifiable indication of the extent to which serious damage is resisted when a loaded needle is raked across a relatively smooth, flat surface. The motor driven machine is recommended as it provides better repeatability of test performance than the hand operated version which can be affected by operator variables. Both mechanised and hand operated scratch testers are designed to meet the scratch test requirements described in method of Test for Paints BS 3900 Part E2 / ISO 1518 1992, BS 6497 (when used with 4kg), and may be adapted to suit other specifications such as ASTM D5178 1991 Mar resistance of Organic Coatings and ECCA-T11 (1985) Metal Marking Resistance Test.

DESCRIPTION

REF 705. This machine, which operates from 200/250V 50HZ (110/60HZ if specified) AC supply, is encased with a cover enclosing the gears and other parts for operating the slide at a constant speed (3-4 cm per second) and the arm lifting mechanism. The needle arm is counterpoised and rigid to prevent whip or chatter at the ball point.

A 1 mm tungsten carbide ball ended needle (normally supplied with each instrument) is held in a chuck at 90° to the test panel and can be easily removed for inspection and replacement. The tungsten carbide needle will provide with care, a long useful life without the need to replace the tip after each test.

Weights providing increments of 100gm to 2kgs (0-20N) mass are loaded above the ball ended needle (or stylus), additional weights up to maximum 10kg loading are available as optional accessories for harder coatings.

Standard test panels (usually metallic) of 150 x 100mm with thickness up to 1.65mm can be used, however upon request provision can be made to accommodate thicker panels if required.

A plastic protective screen is available to avoid injury or intrusion into the mechanism or whilst instrument is activated.

Ref. 706. This is an acceptable and simpler version of the mechanised version as described above. In this version the slide containing the test panel is activated by movement of the lever on the side of the casing. Two 1.5 volt batteries provide power to the lamp circuit for indication of coating failure.

METHOD OF TEST

Reference should be made to the relative test procedure, in general as follows:

- 1) Check suitable needle / stylus is fitted.
- 2) Clamp test panel to slide.
- 3) Load needle arm with weights to determine threshold of failure.
 - a) as specified for go/nogo tests.
 - or b) progressively increasing load until failure occurs.
- 4) Actuate slide - either automatically or manually, depending on model. If failure occurs, needle on voltmeter will flick over (Ref. 705) or red light will illuminate (Ref. 706)
Only conductive metallic panels will be suitable for this test result.
- 5) Remove panel for visual assessment of scratch.

ECCA Metal Marking Resistance test is a procedure designed to evaluate the resistance to a smooth organic coating when rubbed by a metallic object.

The standard model scratch testers can be used by simply substituting the ball ended needle for a special tool onto which 15um thick annealed aluminium foil is attached.

ASTM D2197 Scrape Adhesion Test and D5178 Mar Resistant Test call for a test procedure which requires a radius stylus, this is presented to the test panel at a 45° angle.

ORDERING INFORMATION

Ref. 705 Mechanised Scratch Tester to BS 3900 Part E2 1992/ISO 1518 1992. Complete with 3.4cm / sec. electric motor, 2 Tungsten Carbide Needles and 2 Kg set of weights.

Ref. 706 Hand Operated Scratch Tester to BS 3900 Part E2 1992/ISO 151 8 1992. Complete with 2 Tungsten Carbide Needles and 2 Kg set of weights.

Ref. 705/1 Mechanised Scratch Tester to ASTM D5178/1991. Complete with 6mm/sec. speed motor, stylus assembly and set of weights (2Kg set + 4 x 2Kg = 10Kg)

Ref. 705/2 Mechanised Scratch Tester to ASTM D2197/1986 (Reapproved 1991). Complete with 1 - 2 Sec/Inch speed motor, stylus assembly and set of weights(2Kg set + 4 x 2Kg = 10Kg).

Ref. 706/032/S3 Tungsten Carbide 1 mm ball ended needles.

Ref. 706/032/S4 Ruby Tip 1 mm diameter Hemispherical tip needle.

Ref. 705/050/D 2 K set of Weights. Set consists of 100gm, 2 x 200gms, 500gm and 1000gm.

Ref.706/024/D 2 Kg weight.

Ref. 706/064/D 50gm weight.

Ref. 706/037/A Conversion kit to ASTM D2197 1986. Consisting of ASTM alignment tool, ASTM stylus module, ASTM weight kit and pillar.

Ref. 705/060/D ASTM replacement stylus. (ASTM D5178 and D2197)

Ref. 705/061/D ASTM stylus holder. (ASTM D5178 and D2197)

Ref. 705/058/D Rubber Marking Tool. ECCA-T11 1985 specification.

Ref. 705/065/A Protective plastic screen for motorised scratch testers only.

PLEASE SPECIFY 220 VOLT 50 HZ OR 110 VOLT 60 HZ WHEN ORDERING.

Owing to continuous development. we reserve the right to introduce improvements and modify specifications without prior notice.

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